#10

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PATENT & TRADEMARK OFFICE

SEQUENCE LISTING

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BACH, Fritz H.
ROBSON, Simon

<120> ATP-DIPHOSPHOHYDROLASES, PROCESS OF PURIFICATION THEREOF AND PROCESS OF PRODUCING THEREOF BY RECOMBINANT TECHNOLOGY

<130> 920333.90019

<140> 09/781,796
<141> 2001-02-12

<150> 08/419,204
<151> 1995-04-10

<150> CA96/00223
<151> 1996-04-10

<150> 08/930,921
<151> 1998-02-01

<160> 8

<170> PatentIn Ver. 2.1

<210> 1
<211> 510
<212> PRT
<213> Homo sapiens

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35 40 45

Tyr Gly Ile Val Leu Asp Ala Gly Ser Ser His Thr Ser Leu Tyr Ile
50 55 60

Tyr Lys Trp Pro Ala Glu Lys Glu Asn Asp Thr Gly Val Val His Gln
65 70 75 80

Val Glu Glu Cys Arg Val Lys Gly Pro Gly Ile Ser Lys Phe Val Gln
85 90 95

Lys Val Asn Glu Ile Gly Ile Tyr Leu Thr Asp Cys Met Glu Arg Ala

100 105 110

Arg Glu Val Ile Pro Arg Ser Gln His Gln Glu Thr Pro Val Tyr Leu
115 120 125

Gly Ala Thr Ala Gly Met Arg Leu Leu Arg Met Glu Ser Glu Glu Leu
130 135 140

Ala Asp Arg Val Leu Asp Val Val Glu Arg Ser Leu Ser Asn Tyr Pro
145 150 155 160

Phe Asp Phe Gln Gly Ala Arg Ile Ile Thr Gly Gln Glu Glu Gly Ala
165 170 175

Tyr Gly Trp Ile Thr Ile Asn Tyr Leu Leu Gly Lys Phe Ser Gln Lys
180 185 190

Thr Arg Trp Phe Ser Ile Val Pro Tyr Glu Thr Asn Asn Gln Glu Thr
195 200 205

Phe Gly Ala Leu Asp Leu Gly Gly Ala Ser Thr Gln Val Thr Phe Val
210 215 220

Pro Gln Asn Gln Thr Ile Glu Ser Pro Asp Asn Ala Leu Gln Phe Arg
225 230 235 240

Leu Tyr Gly Lys Asp Tyr Asn Val Tyr Thr His Ser Phe Leu Cys Tyr
245 250 255

Gly Lys Asp Gln Ala Leu Trp Gln Lys Leu Ala Lys Asp Ile Gln Val
260 265 270

Ala Ser Asn Glu Ile Leu Arg Asp Pro Cys Phe His Pro Gly Tyr Lys
275 280 285

Lys Val Val Asn Val Ser Asp Leu Tyr Lys Thr Pro Cys Thr Lys Arg
290 295 300

Phe Glu Met Thr Leu Pro Phe Gln Gln Phe Glu Ile Gln Gly Ile Gly
305 310 315 320

Asn Tyr Gln Gln Cys His Gln Ser Ile Leu Glu Leu Phe Asn Thr Ser
325 330 335

Tyr Cys Pro Tyr Ser Gln Cys Ala Phe Asn Gly Ile Phe Leu Pro Pro
340 345 350

Leu Gln Gly Asp Phe Gly Ala Phe Ser Ala Phe Tyr Phe Val Met Lys
355 360 365

Phe Leu Asn Leu Thr Ser Glu Lys Val Ser Gln Glu Lys Val Thr Glu
370 375 380

Met Met Lys Lys Phe Cys Ala Gln Pro Trp Glu Glu Ile Lys Thr Ser

385 390 395 400

Tyr Ala Gly Val Lys Glu Lys Tyr Leu Ser Glu Tyr Cys Phe Ser Gly
405 410 415

Thr Tyr Ile Leu Ser Leu Leu Leu Gln Gly Tyr His Phe Thr Ala Asp
420 425 430

Ser Trp Glu His Ile His Phe Ile Gly Lys Ile Gln Gly Ser Asp Ala
435 440 445

Gly Trp Thr Leu Gly Tyr Met Leu Asn Leu Thr Asn Met Ile Pro Ala
450 455 460

Glu Gln Pro Leu Ser Thr Pro Leu Ser His Ser Thr Tyr Val Phe Leu
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Met Val Leu Phe Ser Leu Val Leu Phe Thr Val Ala Ile Ile Gly Leu
485 490 495

Leu Ile Phe His Lys Pro Ser Tyr Phe Trp Lys Asp Met Val
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<210> 2
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<212> PRT
<213> Homo sapiens

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35 40 45

Ala Ala Ala Ala Cys Ala Ala Ala Ala Gly Cys Thr Gly Cys Thr Ala
50 55 60

Cys Thr Thr Ala Thr Gly Gly Ala Ala Gly Ala Thr Ala Cys Ala Ala
65 70 75 80

Ala Gly Gly Ala Gly Thr Cys Thr Ala Ala Cys Gly Thr Gly Ala Ala
85 90 95

Gly Ala Cys Ala Thr Thr Thr Thr Gly Cys Thr Cys Cys Ala Ala Gly
100 105 110

Ala Ala Thr Ala Thr Cys Cys Thr Ala Gly Cys Cys Ala Thr Cys Cys
115 120 125

Thr Thr Gly Gly Cys Thr Thr Cys Thr Cys Cys Thr Cys Thr Ala Thr
130 135 140

Cys Ala Thr Ala Gly Cys Thr Gly Thr Gly Ala Thr Ala Gly Cys Thr
145 150 155 160

Thr Thr Gly Cys Thr Thr Gly Cys Thr Gly Thr Gly Gly Gly Gly Thr
165 170 175

Thr Gly Ala Cys Cys Cys Ala Gly Ala Ala Cys Ala Ala Ala Gly Cys
180 185 190

Ala Thr Thr Gly Cys Cys Ala Gly Ala Ala Ala Ala Cys Gly Thr Thr
195 200 205

Ala Ala Gly Thr Ala Thr Gly Gly Gly Ala Thr Thr Gly Thr Gly Cys
210 215 220

Thr Gly Gly Ala Thr Gly Cys Gly Gly Gly Thr Thr Cys Thr Thr Cys
225 230 235 240

Thr Cys Ala Cys Ala Cys Ala Ala Gly Thr Thr Thr Ala Thr Ala Cys
245 250 255

Ala Thr Cys Thr Ala Thr Ala Ala Gly Thr Gly Gly Cys Cys Ala Gly
260 265 270

Cys Ala Gly Ala Ala Ala Ala Gly Gly Ala Gly Ala Ala Thr Gly Ala
275 280 285

Cys Ala Cys Ala Gly Gly Cys Gly Thr Gly Gly Thr Gly Cys Ala Thr
290 295 300

Cys Ala Ala Gly Thr Ala Gly Ala Ala Gly Ala Ala Thr Gly Cys Ala
305 310 315 320

Gly Gly Gly Thr Thr Ala Ala Ala Gly Gly Thr Cys Cys Thr Gly Gly
325 330 335

Ala Ala Thr Cys Thr Cys Ala Ala Ala Ala Thr Thr Thr Gly Thr Thr
340 345 350

Cys Ala Gly Ala Ala Ala Gly Thr Ala Ala Ala Thr Gly Ala Ala Ala
355 360 365

Thr Ala Gly Gly Cys Ala Thr Thr Thr Ala Cys Cys Thr Gly Ala Cys
370 375 380

Thr Gly Ala Thr Thr Gly Cys Ala Thr Gly Gly Ala Ala Ala Gly Ala
385 390 395 400

Gly Cys Thr Ala Gly Gly Gly Ala Ala Gly Thr Gly Ala Thr Thr Cys
405 410 415

Cys Ala Ala Gly Gly Thr Cys Cys Cys Ala Gly Cys Ala Cys Cys Ala
420 425 430

Ala Gly Ala Gly Ala Cys Ala Cys Cys Cys Gly Thr Thr Thr Ala Cys
435 440 445

Cys Thr Gly Gly Gly Ala Gly Cys Cys Ala Cys Gly Gly Cys Ala Gly
450 455 460

Gly Cys Ala Thr Gly Cys Gly Gly Thr Thr Gly Cys Thr Cys Ala Gly
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Gly Ala Thr Gly Gly Ala Ala Ala Gly Thr Gly Ala Ala Gly Ala Gly
485 490 495

Thr Thr Gly Gly Cys Ala Gly Ala Cys Ala Gly Gly Gly Thr Thr Cys
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Thr Gly Gly Ala Thr Gly Thr Gly Gly Thr Gly Gly Ala Gly Ala Gly
515 520 525

Gly Ala Gly Cys Cys Thr Cys Ala Gly Cys Ala Ala Cys Thr Ala Cys
530 535 540

Cys Cys Cys Thr Thr Thr Gly Ala Cys Thr Thr Cys Cys Ala Gly Gly
545 550 555 560

Gly Thr Gly Cys Cys Ala Gly Gly Ala Thr Cys Ala Thr Thr Ala Cys
565 570 575

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580 585 590

Gly Cys Cys Thr Ala Thr Gly Gly Cys Thr Gly Gly Ala Thr Thr Ala
595 600 605

Cys Thr Ala Thr Cys Ala Ala Cys Thr Ala Thr Cys Thr Gly Cys Thr
610 615 620

Gly Gly Gly Cys Ala Ala Ala Thr Thr Cys Ala Gly Thr Cys Ala Gly
625 630 635 640

Ala Ala Ala Ala Cys Ala Ala Gly Gly Thr Gly Gly Thr Thr Cys Ala
645 650 655

Gly Cys Ala Thr Ala Gly Thr Cys Cys Cys Ala Thr Ala Thr Gly Ala
660 665 670

Ala Ala Cys Cys Ala Ala Thr Ala Ala Thr Cys Ala Gly Gly Ala Ala
675 680 685

Ala Cys Cys Thr Thr Thr Gly Gly Ala Gly Cys Thr Thr Thr Gly Gly
690 695 700

Ala Cys Cys Thr Thr Gly Gly Gly Gly Gly Ala Gly Cys Cys Thr Cys
705 710 715 720

Thr Ala Cys Ala Cys Ala Ala Gly Thr Cys Ala Cys Thr Thr Thr Thr
725 730 735

Gly Thr Ala Cys Cys Cys Cys Ala Ala Ala Ala Cys Cys Ala Gly Ala
740 745 750

Cys Thr Ala Thr Cys Gly Ala Gly Thr Cys Cys Cys Cys Ala Gly Ala
755 760 765

Thr Ala Ala Thr Gly Cys Thr Cys Thr Gly Cys Ala Ala Thr Thr Thr
770 775 780

Cys Gly Cys Cys Thr Cys Thr Ala Thr Gly Gly Cys Ala Ala Gly Gly
785 790 795 800

Ala Cys Thr Ala Cys Ala Ala Thr Gly Thr Cys Thr Ala Cys Ala Cys
805 810 815

Ala Cys Ala Thr Ala Gly Cys Thr Thr Cys Thr Thr Gly Thr Gly Cys
820 825 830

Thr Ala Thr Gly Gly Gly Ala Ala Gly Gly Ala Thr Cys Ala Gly Gly
835 840 845

Cys Ala Cys Thr Cys Thr Gly Gly Cys Ala Gly Ala Ala Ala Cys Thr
850 855 860

Gly Gly Cys Cys Ala Ala Gly Gly Ala Cys Ala Thr Thr Cys Ala Gly
865 870 875 880

Gly Thr Thr Gly Cys Ala Ala Gly Thr Ala Ala Thr Gly Ala Ala Ala
885 890 895

Thr Thr Cys Thr Cys Ala Gly Gly Gly Ala Cys Cys Cys Ala Thr Gly
900 905 910

Cys Thr Thr Thr Cys Ala Thr Cys Cys Thr Gly Gly Ala Thr Ala Thr
915 920 925

Ala Ala Gly Ala Ala Gly Gly Thr Ala Gly Thr Gly Ala Ala Cys Gly
930 935 940

Thr Ala Ala Gly Thr Gly Ala Cys Cys Thr Thr Thr Ala Cys Ala Ala
945 950 955 960

Gly Ala Cys Cys Cys Cys Cys Thr Gly Cys Ala Cys Cys Ala Ala Gly
965 970 975

Ala Gly Ala Thr Thr Thr Gly Ala Gly Ala Thr Gly Ala Cys Thr Cys
980 985 990

Thr Thr Cys Cys Ala Thr Thr Cys Cys Ala Gly Cys Ala Gly Thr Thr
995 1000 1005

Thr Gly Ala Ala Ala Thr Cys Cys Ala Gly Gly Gly Thr Ala Thr Thr
1010 1015 1020

Gly Gly Ala Ala Ala Cys Thr Ala Thr Cys Ala Ala Cys Ala Ala Thr
1025 1030 1035 1040

Gly Cys Cys Ala Thr Cys Ala Ala Ala Gly Cys Ala Thr Cys Cys Thr
1045 1050 1055

Gly Gly Ala Gly Cys Thr Cys Thr Thr Cys Ala Ala Cys Ala Cys Cys
1060 1065 1070

Ala Gly Thr Thr Ala Cys Thr Gly Cys Cys Cys Thr Thr Ala Cys Thr
1075 1080 1085

Cys Cys Cys Ala Gly Thr Gly Thr Gly Cys Cys Thr Thr Cys Ala Ala
1090 1095 1100

Thr Gly Gly Gly Ala Thr Thr Thr Thr Cys Thr Thr Gly Cys Cys Ala
1105 1110 1115 1120

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1125 1130 1135

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1140 1145 1150

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Thr Cys Thr Gly Thr Gly Cys Thr Cys Ala Gly Cys Cys Thr Thr Gly
1235 1240 1245

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1250 1255 1260

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1265 1270 1275 1280

Ala Gly Gly Ala Gly Ala Ala Gly Thr Ala Cys Cys Thr Gly Ala Gly
1285 1290 1295

Thr Gly Ala Ala Thr Ala Cys Thr Gly Cys Thr Thr Thr Thr Cys Thr
1300 1305 1310

Gly Gly Thr Ala Cys Cys Thr Ala Cys Ala Thr Thr Cys Thr Cys Thr
1315 1320 1325

Cys Cys Cys Thr Cys Cys Thr Thr Cys Thr Gly Cys Ala Ala Gly Gly
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Cys Thr Ala Thr Cys Ala Thr Thr Thr Cys Ala Cys Ala Gly Cys Thr
1345 1350 1355 1360

Gly Ala Thr Thr Cys Cys Thr Gly Gly Gly Ala Gly Cys Ala Cys Ala
1365 1370 1375

Thr Cys Cys Ala Thr Thr Thr Cys Ala Thr Thr Gly Gly Cys Ala Ala
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Gly Ala Thr Cys Cys Ala Gly Gly Gly Cys Ala Gly Cys Gly Ala Cys
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Gly Cys Cys Gly Gly Cys Thr Gly Gly Ala Cys Thr Thr Thr Gly Gly
1410 1415 1420

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Gly Ala Cys Cys Ala Ala Cys Ala Thr Gly Ala Thr Cys Cys Cys Ala
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Gly Cys Thr Gly Ala Gly Cys Ala Ala Cys Cys Ala Thr Thr Gly Thr
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Cys Thr Cys Cys Ala Cys Cys Thr Ala Thr Gly Thr Cys Thr Thr Cys
1490 1495 1500

Cys Thr Cys Ala Thr Gly Gly Thr Thr Cys Thr Ala Thr Thr Cys Thr
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Cys Cys Cys Thr Gly Gly Thr Cys Cys Thr Thr Thr Thr Cys Ala Cys
1525 1530 1535

Ala Gly Thr Gly Gly Cys Cys Ala Thr Cys Ala Thr Ala Gly Gly Cys
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Thr Thr Gly Cys Thr Thr Ala Thr Cys Thr Thr Thr Cys Ala Cys Ala
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1570 1575 1580

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Cys Ala Ala Ala Ala Gly Cys Ala Gly Cys Thr Gly Ala Ala Ala Thr
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Ala Thr Gly Cys Thr Gly Gly Cys Thr Gly Gly Ala Gly Thr Gly Ala
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Cys Ala Thr Cys Cys Thr Thr Cys Cys Cys Thr Gly Thr Cys Thr Gly
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1700 1705 1710

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Thr Thr Gly Gly Cys Thr Thr Thr Thr Ala Cys Thr Gly Ala Ala Gly
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Cys Cys Thr Thr Thr Cys Thr Thr Thr Thr Gly Gly Ala Gly Gly Thr
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Ala Thr Thr Cys Ala Ala Thr Ala Thr Cys Cys Thr Thr Thr Gly Cys
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Cys Thr Cys Ala Ala Gly Gly Ala Cys Thr Thr Cys Gly Gly Cys Ala
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1810 1815

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<210> 4
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<400> 4
Leu Leu Arg Met Glu
1 5

<210> 5
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<212> PRT
<213> Bovine

<220>
<221> UNSURE
<222> (8)
<223> Xaa, where Xaa = any amino acid

<400> 5
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1 5 10

<210> 6
<211> 10
<212> PRT
<213> Bovine

<400> 6
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1 5 10

<210> 7
<211> 19
<212> PRT
<213> Porcine

<400> 7
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Ser Thr Gln

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<211> 16
<212> PRT
<213> Human and bovine

<400> 8
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1 5 10 15